1614 #11 Dec 3/25/03

Please type a plus sign (+) inside this box → [+]

PTO/SB/21 (08-00)
Approved for use through 10/31/02. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

OIPE JC100 MAR 20 2003 PATENT & TRADEMARK OFFICE

TRANSMITTAL FORM

(to be used for all correspondence after initial filing)

Application Number	09/973,473
Filing Date	October 9, 2001
First Named Inventor	Nahum SONENBERG
Group Art Unit	1614
Examiner Name	To Be Assigned
Total Number Of Pages In This Submission	8 AND 67 REFS
Attorney Docket No.	514012000400

RECEIVED MAR 21 2003 TECH CENTER 1600/2900

ENCLOSURES (check all that apply)

- [ ] Fee Transmittal Form
  - [ ] Fee Attached
- [ ] Amendment / Reply
  - [ ] After Final
  - [ ] Affidavits/declarations
- [ ] Extension of Time Request
- [ ] Express Abandonment Request
- [x] Information Disclosure Statement – 3 pages
- [ ] Certified Copy of Priority Document(s)
- [ ] Response to Missing Parts/ Incomplete Application
  - [ ] Response to Missing Parts under 37 CFR 1.52 or 1.53
- [ ] Assignment Papers *(for an Application)*
- [ ] Drawing(s)
- [ ] Licensing-related Papers
- [ ] Petition
- [ ] Petition to Convert to a Provisional Application
- [ ] Power of Attorney, Revocation Change of Correspondence Address
- [ ] Terminal Disclaimer
- [ ] Request for Refund
- [ ] CD, Number of CD(s)_____
- [ ] After Allowance Communication to Group
- [ ] Appeal Communication to Board of Appeals and Interferences
- [ ] Appeal Communication to Group *(Appeal Notice, Brief, Reply Brief)*
- [ ] Proprietary Information
- [ ] Status Letter
- [x] Other Enclosure(s) *(please identify below):*

Form PTO-1449 – 4 pages
67 References
Return Receipt Postcard

Remarks

SIGNATURE OF APPLICANT, ATTORNEY OR AGENT

Firm or Individual Name	Morrison & Foerster LLP, 755 Page Mill Road, Palo Alto, California 94304 Gladys H. Monroy (32,430)
Signature	Gladys Monroy
Date	March 11, 2003

CERTIFICATE OF MAILING BY "FIRST CLASS MAIL"

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Assistant Commissioner for Patents, Washington, D.C. 20231, on March 11, 2003.

Denise Lade

Denise Lade

Burden Hours Statement: This form is estimated to take 0.2 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Box Patent Application, Washington, DC 20231.

pa-772054

OIPE
MAR 2 0 2003
PATENT & TRADEMARK OFFICE
JC100

PATENT
Docket No. 514012000400

CERTIFICATE OF MAILING BY "FIRST CLASS MAIL"

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Assistant Commissioner for Patents, Washington, D.C. 20231, on March 11, 2003.

Denise Lade

Denise Lade

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In the application of:

Nahum SONENBERG et al.

Serial No.: 09/973,473

Filing Date: October 9, 2001

For: NON-HUMAN TRANSGENIC ANIMAL WHOSE GERM CELLS AND SOMATIC CELLS CONTAIN A KNOCKOUT MUTATION IN DNA ENCODING 4E-BP1

Examiner: To be assigned

Group Art Unit: 1614

INFORMATION DISCLOSURE STATEMENT UNDER 37 C.F.R. § 1.97 AND § 1.98

Assistant Commissioner for Patents
Washington, D.C. 20231

Dear Sir:

Pursuant to 37 C.F.R. § 1.97 and § 1.98, Applicants submit for consideration in the above-identified application the documents listed on the attached Form PTO-1449. Copies of the documents are also submitted herewith. The Examiner is requested to make these documents of record.

pa-655205

This Information Disclosure Statement is submitted:

☐ With the application; accordingly, no fee or separate requirements are required.

☒ Within three months of the application filing date or before mailing of a first Office Action on the merits; accordingly, no fee or separate requirements are required.

☐ After receipt of a first Office Action on the merits but before mailing of a final Office Action or Notice of Allowance.

- ☐ A fee is required. A check in the amount of is enclosed.
- ☐ A fee is required. Accordingly, a Fee Transmittal form (PTO/SB/17) is attached to this submission in duplicate.
- ☐ A Certification under 37 C.F.R. § 1.97(e) is provided below; accordingly; no fee is believed to be due.

☐ After mailing of a final Office Action or Notice of Allowance, but before payment of the issue fee.

- ☐ A Certification under 37 C.F.R. § 1.97(e) is provided below and a check in the amount of is enclosed.
- ☐ A Certification under 37 C.F.R. § 1.97(e) is provided below and a Fee Transmittal form (PTO/SB/17 is attached to this submission in duplicate.

Applicants would appreciate the Examiner initialing and returning the Form PTO-1449, indicating that the information has been considered and made of record herein.

The information contained in this Information Disclosure Statement under 37 C.F.R. § 1.97 is not to be construed as a representation that: (i) a complete search has been made; (ii) additional information material to the examination of this application does not exist; (iii) the information, protocols, results and the like reported by third parties are accurate or enabling; or (iv) the above information constitutes prior art to the subject invention.

In the unlikely event that the Patent Office determines that an extension and/or other relief is required, Applicants petition for any required relief including extensions of time and authorize the Assistant Commissioner to charge the cost of such petitions and/or other fees due in connection with the filing of this document to **Deposit Account No. 03-1952** referencing 514012000400. However, the Assistant Commissioner is not authorized to charge the cost of the issue fee to the Deposit Account.

Dated: March 11, 2003

Respectfully submitted,

By: _____
Gladys H. Monroy
Registration No. 32,430

Morrison & Foerster LLP
755 Page Mill Road
Palo Alto, California 94304-1018
Telephone: (650) 813-5711
Facsimile: (650) 494-0792

Form PTO-1449

INFORMATION DISCLOSURE CITATION IN AN APPLICATION

(Use several sheets if necessary)

Docket Number 514012000400	Application Number 09/973,473
Applicant: Nahum SONENBERG et al.	
Filing Date October 9, 2001	Group Art Unit 1614
Mailing Date March 11, 2003	

OIPE JC100 MAR 2 0 2003 PATENT & TRADEMARK OFFICE

RECEIVED MAR 2 1 2003 TECHCENTER 1600/2900

U.S. PATENT DOCUMENTS

Examiner Initials	Ref. No.	Date	Document No.	Name	Class	Subclass	Filing Date If Appropriate
	1.	07/28/1987	4,683,195	Mullis et al.			
	2.	07/28/1987	4,683,202	Mullis			
	3.	01/24/1989	4,800,159	Mullis et al.			
	4.	10/23/1990	4,965,188	Mullis et al.			
	5.	01/22/1991	4,987,071	Cech et al.			
	6.	01/14/1997	5,593,974	Rosenberg et al.			
	7.	01/27/1998	5,712,384	Symonds et al.			
	8.	05/26/1998	5,756,291	Griffin et al.			
	9.	08/11/1998	5,792,613	Schmidt et al.			
	10.	02/23/1999	5,874,231	Sonenberg et al.			
	11.	03/09/1999	5,879,938	Usman et al.			

FOREIGN PATENT DOCUMENTS

Examiner Initials	Ref. No.	Date	Document No.	Country	Class	Subclass	Translation YES	Translation NO
	12.	05/13/1993	WO 93/08845	WIPO				
	13.	07/21/1994	WO 94/15646	WIPO				
	14.	04/18/1996	WO 96/11266	WIPO				
	15.	10/24/1996	WO 96/32966	WIPO				
	16.	12/19/1996	WO 96/41169	WIPO				

OTHER DOCUMENTS *(including author, title, Date, Pertinent Pages, Etc.)*

Examiner Initials	Ref. No.	Title
	17.	Altmann, M. et al. (1997). "A novel inhibitor of cap-dependent translation initiation in yeast: p20 competes with eIF4G for binding to eIF4E," *EMBO Journal* 16(5):1114-1121.
	18.	Blackshear, P.J. et al. (1997). "Disruption of the Gene Encoding the Mitogen-regulated Translational Modulator PHAS-I in Mice," *J. Biol. Chem.* 272(50):31510-31514.

EXAMINER: To Be Assigned	DATE CONSIDERED:

EXAMINER: Initial if citation considered, whether or not the citation conforms with MPEP 609. Draw a line through the citation if not in conformance and not considered. Include a copy of this form with next communication to applicant.

RECEIVED
MAR 2 1 2003
TECHNOLOGY CENTER 1600

OIPE JC100
MAR 2 0 2003
PATENT & TRADEMARK OFFICE

Form PTO-1449	Docket Number 514012000400	Application Number 09/973,473
INFORMATION DISCLOSURE CITATION IN AN APPLICATION *(Use several sheets if necessary)*	Applicant: Nahum SONENBERG et al.	
	Filing Date October 9, 2001	Group Art Unit 1614
	Mailing Date March 11, 2003	

	19.	Boss, O. et al. (1998). "The uncoupling proteins, a review," *Eur. J. Endocrinol* 139:1-9.
	20.	Bragado, M. et al. (1998). "Regulation of Protein Synthesis by Cholecystokinin in Rat Pancreatic Acini Involves PHAS-I and the p70 S6 Kinase Pathway," *Gastroenterology* 115:733-742.
	21.	Coleman, D.L. et al. (1973). "The Influence of Genetic Background on the Expression of the Obese (Ob) Gene in the Mouse," *Diabetologia* 9:287-293.
	22.	Enerbäck, S. et al. (1997). "Mice lacking mitochondrial uncoupling protein are cold-sensitive but not obese," Nature 387:90-94.
	23.	Ewart-Toland, A. et al. (1999). "Effect of the Genetic Background on the Reproduction of Leptin-Deficient Obese Mice," *Endocrinology* 140(2):732-738.
	24.	Fletcher, C. M. et al. (1998). "4E Binding Proteins Inhibit the Translation Factor eIF4E without Folded Structure," *Biochemistry* 37:9-15.
	25.	Frederickson, R.M. et al. (1991). "Phosphorylation of Eukaryotic Translation Initiation Factor 4E is Increased in Src-Transformed Cell Lines," *Mol. Cell. Biol.* 11(5):2896-2900.
	26.	Gingras, A-C. et al. (1996) "Activation of the Translational Suppressor 4E-BP1 Following Infection with Encephalomyocarditis Virus and Poliovirus," *Proc. Natl. Acad. Sci. USA* 93:5578-5583.
	27.	Gingras, A-C. et al. (1999). "eIF4 Initiation Factors: Effectors of mRNA Recruitment to Ribosomes and Regulators of Translation," *Annu. Rev. Biochem.* 68:913-963.
	28.	Guerra, C. et al. (1998). "Emergence of Brown Adipocytes in White Fat in Mice is Under Genetic Control," *J. Clin. Invest.* 102(2):412-420.
	29.	Haghighat, A. et al. (1995). "Repression of cap-dependent translation by 4E-binding protein 1: competition with p220 for binding to eukaryotic initiation factor-4E," *EMBO Journal* 14(22):5701-5709.
	30.	Hanks, A. et al. (1995). "Rescue of the En-1 Mutant Phenotype by Replacement of En-1 with En-2," Science 269:679-682.
	31.	Hu, C. et al. (1994). "Molecular cloning and tissue distribution of PHAS-I, an intracellular target for insulin and growth factors," *Proc. Natl. Acad. Sci. USA* 91:3730-3734.
	32.	Hummel, K.P. et al. (1972). "The Influence of Genetic Background on Expression of Mutations at the Diabetes Locus in the Mouse. I. C57BL-KsJ and C57BL-6J Strains," Biochemical Genetics. 7:1-13.
	33.	Jacobson, A. (1996). "Poly(A) Metabolism and Translation: The Closed Loop Model" Chapter 16 in Translational Control. J. W. B. Hershey, M. B. Mathews, and N. Sonenberg eds., Cold Spring Harbor Laboratory Press: Cold Spring Harbor, NY, pp. 451-480.
	34.	Jain, R.G. et al. (1997). "Ectopic Expression of Hel-N1, an RNA-Binding Protein, Increases Glucose Transporter (GLUT1) Expression in 3T3-L1 Adipocytes," *Mol. Cell. Biol.* 17(2): 954-962.
	35.	Kimball, S. et al. (1996). "Insulin and Diabetes Cause Reciprocal Changes in the Association of eIF-4E and PHAS-I in Rat Skeletal Muscle," *Am. J. Physiol.* 270:C705-C709.
	36.	Kopecky, J. et al. (1995). "Expression of the Mitochondrial Uncoupling Protein Gene from the aP2 Gene Promoter Prevents Genetic Obesity," *J. Clin. Invest.* 96:2914-2923.
	37.	Lawrence, J.C. et al. (1997). "PHAS/4E-BPs as Regulators of mRNA Translation and Cell Proliferation," *Trends in Biochemical Science, Elsevier Publication,* 22:345-349.

EXAMINER:	DATE CONSIDERED:

EXAMINER: Initial if citation considered, whether or not the citation conforms with MPEP 609. Draw a line through the citation if not in conformance and not considered. Include a copy of this form with next communication to applicant.

Form PTO-1449

INFORMATION DISCLOSURE CITATION IN AN APPLICATION

(Use several sheets if necessary)

Docket Number 514012000400	Application Number 09/973,473
Applicant: Nahum SONENBERG et al.	
Filing Date October 9, 2001	Group Art Unit 1614
Mailing Date March 11, 2003	

OIPE JC100 MAR 2 0 2003 PATENT & TRADEMARK OFFICE

	38.	Lazaris-Karatzas, A. et al. (1990). "Malignant transformation by a eukaryotic initiation factor subunit that binds to mRNA 5' cap," *Nature* 345(6275):544-547.
	39.	Lazaris-Karatzas, A. et al. (1992). "Ras Mediates Translation Initiation Factor 4E-Induced Malignant Transformation," *Genes Dev.* 6:1631-1642.
	40.	Lin, T.A. & Lawrence, Jr., J.C. (1996). "Control of the Translational Regulators PHAS-I and PHAS-II by Insulin and cAMP in 3T3-L1 Adipocytes," *J. Biol. Chem.* 271(47):30199-30204.
	41.	Lin, T.A. et al. (1994). "PHAS-I as a Link Between Mitogen-Activated Protein Kinase and Translation Initiation," *Science* 266:653-656.
	42.	Lowell, B. B. et al. (1993). "Development of obesity in transgenic mice after genetic ablation of brown adipose tissue," *Nature* 366:740-742.
	43.	Mader, S. et al. (1995). "The Translation Initiation Factor eIF-4E Binds to a Common Motif Shared by the Translation Factor eIF-4γ and the Translational Repressors 4E-Binding Proteins," *Molecular and Cell Biology* 15(9):4990-4997.
	44.	Marcotrigiano, J. et al. (1997). "Cocrystal Structure of the Messenger RNA 5' Cap-Binding Protein (eIF4E) Bound to 7-methyl-GDP," *Cell* 89:951-961.
	45.	Marcotrigiano, J. et al. (1999). "Cap-Dependent Translation Initiation in Eukaryotes Is Regulated by a Molecular Mimic of eIF4G," *Molecular Cell* 3:707-716.
	46.	Matsuo, H. et al. (1997). "Structure of translation factor eIF4E bound to m^7GDP and interaction with 4E-binding protein.," *Nature Struct. Biol.* 4(9):717-724.
	47.	Minich, W.B. et al. (1994). "Chromatographic Resolution of *in vivo* Phosphorylated and Nonphosphorylated Eukaryotic Translation Initiation Factor eIF-4E: Increased Cap Affinity of the Phosphorylated Form," *Froc. Natl. Acad. Sci. USA* 91:7668-7672.
	48.	Morgenstern, J.P. & Land, H. (1990). "Advanced Mammalian Gene Transfer: High Titre Retroviral Vectors with Multiple Drug Selection Markers and a Complementary Helper-Free Packaging Cell Line," *Nucleic Acids Res.* 18(12):3587-3596.
	49.	Niwa, H. et al. (1991). "Efficient Selection for High-Expression Transfectants with a Novel Eukaryotic Vector," *Gene* 108:193-199.
	50.	Pause, A. et al. (1994). "Insulin-dependent stimulation of protein synthesis by phosphorylation of a regulator of 5'-cap function," *Nature* 371:762-767.
	51.	Poulin, F. et al. (1998). "4E-BP3, a New Member of the Eukaryotic Initiation Factor 4E-binding Protien Family," *J. Biol. Chem.* 273(22):14002-14007.
	52.	Pyronnet, S. et al. (1999). "Human eukaryotic translation initiation factor 4G (eIF4G) recruits Mnk1 to phosphorylate eIF4E," *EMBO J.* 18(1):270-279.
	53.	Ramírez-Solis, R. et al. (1993). "Gene Targeting in Embryonic Stem Cells," *Methods Enzymol.* 225:855-878.
	54.	Robertson, E.J. (1987). "Embryo-Derived Stem Cell Lines" Chapter 4 *In* Tetracarcinomas and Embryonic Stem Cells: A Practical Approach. Robertson, E.J. ed. IRL Press: Oxford, pp. 71-112.
	55.	Rousseau, D. et al. (1996). "The eIF4E-Binding Proteins 1 and 2 are Negative Regulators of Cell Growth," *Oncogene* 13:2415-2420.

EXAMINER:	DATE CONSIDERED:

EXAMINER: Initial if citation considered, whether or not the citation conforms with MPEP 609. Draw a line through the citation if not in conformance and not considered. Include a copy of this form with next communication to applicant.

Form PTO-1449	Docket Number 514012000400	Application Number 09/973,473
INFORMATION DISCLOSURE CITATION IN AN APPLICATION *(Use several sheets if necessary)*	Applicant Nahum SONENBERG et al.	
	Filing Date October 9, 2001	Group Art Unit 1614
	Mailing Date March 11, 2003	

OIPE JC100 MAR 2 0 2003 PATENT & TRADEMARK OFFICE

	56.	Sibilia, M. & Wagner, E.F. (1995). "Strain-Dependent Epithelial Defects in Mice Lacking the EGF Receptor," *Science* 269:234-238.
	57.	Sonenberg, N. (1996). "mRNA 5' Cap-binding Protein eIF4E and Control of Cell Growth" Chapter 8 in Translational Control. J. W. B. Hershey, M. B. Mathews and N. Sonenberg eds., Cold Spring Harbor Laboratory Press: Cold Spring Harbor, NY, pp. 245-270.
	58.	Sonenberg, N. and Gingras, A-C. (1998). "The mRNA 5' cap-binding protein eIF4E and control of cell growth," *Curr. Opin. Cell Biol.* 10:268-275.
	59.	Surwit, R. S. et al. (1995). "Differential Effects of Fat and Sucrose on the Development of Obesity and Diabetes in C57BL/6J and A/J Mice," *Metabolism* 44(5):645-651.
	60.	Takeuchi, T. et al. (1999). "Real-Time Detection System for Quantification of Hepatatis C Virus Genome," *Gastroenterology* 116:636-642.
	61.	Tsukiyama-Kohara, K. et al. (1992). "Internal Ribosome Entry Site Within Hepatitis C Virus RNA," *J. Virol.* 66(3):1476-1483.
	62.	Tsukiyama-Kohara, K. et al. (1996). "Tissue Distribution, Genomic Structure, and Chromosome Mapping of Mouse and Human Eukaryotic Initiation Factor 4E-Binding Proteins 1 and 2," *Genomics* 38:353-363.
	63.	Wang, W. et al. (1998). "The Phosphorylation of Eukaryotic Initiation Factor elF4E in Response to Phorbol Esters, Cell Stresses, and Cytokines Is Mediated by Distinct MAP Kinase Pathways," *J. Biol. Chem.* 273(16):9373-9377.
	64.	Whalen, S.G. et al. (1996). "Phosphorylation of eIF-4E on Serine 209 by Protein Kinase C is Inhibited by the Translational Repressors, 4E-Binding Proteins," *J. Biol. Chem.* 271(20):11831-11837.
	65.	Wu, Z. et al. (1999). "Mechanisms Controlling Mitochondrial Biogenesis and Respiration through the Thermogenic Coactivator PGC-1," *Cell* 98:115-124.
	66.	Wu, Z., et al. (1999). "Transcriptional activation of adipogenesis," *Curr. Opin. Cell Biol.* 11:689-694.
	67.	Yasui, K. et al. (1998). "The Native Form and Maturation Process of Hepatitis C Virus Core Protein," *J. Virol.* 72(7):6048-6055.

EXAMINER:	DATE CONSIDERED:

EXAMINER: Initial if citation considered, whether or not the citation conforms with MPEP 609. Draw a line through the citation if not in conformance and not considered. Include a copy of this form with next communication to applicant.